

Data Evaluation Documentation and Findings

Parcel:	G	Unit:	ES115 (S0113)
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Section I: Reason For Evaluation (Summary of Flagged Data):										
1) K-S Test: Pass/Fail?									Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/>	
Units Evaluation Flags										
Ac-228	Bi-212	Bi-214	Cs-137	K-40	Pb-212	Pb-214	Ra-226	Total		
			2					2		
Days Evaluation Flags										
Ac-228	Bi-212	Bi-214	Cs-137	K-40	Pb-212	Pb-214	Ra-226	Total	Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>	
								0		
2) Logic Tests: Pass/Fail?										
Logic Test 1: Were FSS samples collected on the same day? Observation: FSS samples 01 through 18 were collected on 07/09/2008.										Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Logic Test 2: Were FSS samples collected on the same day or after confirmatory/biased samples were collected? Observation: Bias samples 19 through 24 were collected on 07/09/2008 (during and just after FSS samples).										Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Logic Test 3: Were samples collected before they were counted? Observation:									Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Logic Test 4: Were all FSS samples analyzed within 2 working days? Observation: FSS samples were analyzed on 07/09/2008 and 07/10/2008.									Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Logic Test 5: Were samples counted within 2 weeks of sample collection? Observation: Samples 01, 03, and 09 counted zero (0) days after collection. Samples 02, 04 through 08, and 10 through 24 were counted 1 day after collection.									Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Logic Test 6: Is the mass of the sample reported by the onsite lab the same as the mass reported by the offsite lab? Observation: Offsite lab mass was not reported.									Yes <input type="checkbox"/> No <input type="checkbox"/>	
3) Time Series Plots: Pass/Fail?									Pass <input checked="" type="checkbox"/> Fail <input type="checkbox"/>	
Bi-214	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
	Notes:									
Ac-228	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
	Notes:									
K-40	Anomalies or unusual trends identified?								No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
	Notes:									
4) Historically Significant Site Location: Yes/No?									No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
Was a known radiation cleanup performed at (or near) this site? If yes, where?									No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
Is the sewer line connected to or downstream from a radiologically-impacted building? If yes, which building?									No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
5) Allegation: Yes/No?									No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	

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If yes, description:		
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Section II: Evaluations Performed			
1) Other Statistics Results		Pass <input type="checkbox"/>	Fail <input checked="" type="checkbox"/>
Box Plots	Anomalies or unusual trends identified? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Notes: Two low outliers identified for Ac-228 Final Systematic samples. These outliers are not considered anomalous or unusual.		
Normal Quantile Plots	Anomalies or unusual trends identified? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Notes: Final Systematic samples display potential characteristics of at least two slightly different data populations for K-40.		
2) Additional Database Review Performed?		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
Review objectives: 1. Investigate K-S Test results (2 flags for Cs-137 units). 2. Review and compare S0115 data with origination trench units' data (TU104, TU105, and TU113).			
Observations: 1. Cs-137 results for ES115 were generally higher than the average Parcel G results, but otherwise the data were within the expected range and were low compared to the removal action objective; The K-S flags do not implicate data falsification nor do they raise concerns regarding potential Cs-137 contamination. 2. S0115 Ac-228 and Bi-214 data compare very well with TU0105 and TU-0113 data; The average K-40 results for S0115 are slightly higher than TU105/TU113 data, but are within the range of variability. Overall, the data are viewed as consistent.			
3) Adjacent Survey/Trench Unit Review		Pass <input checked="" type="checkbox"/>	Fail <input type="checkbox"/>
List of Adjacent Units: TU105, TU110, TU111, TU112, and TU355.			
Was a review of adjacent unit's data performed? Yes.			
Anomalies or unusual trends identified?		No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
Notes: The potential for two K-40 data populations appears reasonable when looking at the remediation action support data for TU105 (a source for ES115) and does not indicate data falsification.			
4) SUPR or FSSR Review Performed? – March 2011 Final SUPR			
Summary of Excavation / Sampling Activities	Survey Unit 113 is the sum of TU113, excavated soil from ES115, ES116 and a volume of import fill material; which was used for backfill. The gamma scan of ES115 identified several measurements above the investigation level. Therefore, six additional samples were collected. None of the sample results identified activity above the release criteria for any radionuclide of concern (ROC). Eighteen (18) systematic samples were collected from ES115. Samples 03 and 09 were randomly selected to be analyzed for Sr-90. None of the sample results identified activity above the release criteria for any ROC.		
Gamma Static Data Observations:	Not provided in the SUPR.		
Gamma Scan Data Observations:	Six bias samples were collected from an apparently geographically-located area where 20 gamma scan measurements were above the 3-sigma investigation level of 3,020 cpm (total gamma). The maximum result was 3,497 cpm and is documented as being sampled. All six bias samples were included in the report and none exceeded cleanup criteria.		

Data Evaluation Documentation and Findings

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List of Excavation / Overburden Units Used for Backfill	ES115 and ES116 were used to backfill TU113		
Onsite / Offsite Lab Data Comparison:	Two samples (Samples 04 and 09) were sent offsite for analysis. The Ac-228 and Bi-214 results were comparable; the onsite K-40 results were higher than offsite results. Sample 04 fails for RER (1.4) and RPD (48%).		
Scan / Static Surveyor Name:	Not provided in the SUPR.		
Sampler / Surveyor Name:	Not provided in the SUPR.		
5) RACR or CSR Review Performed? – December 2011 Final Parcel G RACR			
List of Excavation / Overburden Units Created from Excavation:	ES115: TU104 (4%), TU105 (76%), TU113 (20%)		

Section III: Conclusions and Recommendations			
<p>Summary of Findings: Based on the findings of this evaluation, evidence of potential data falsification was found. The SUPR reported elevated gamma scan measurements and the collection of biased samples; however, no remediation was performed. This narrative is consistent with the allegation that biased samples were collected in areas to avoid potentially elevated sample results.</p>			
<input type="checkbox"/> No Further Action	<input type="checkbox"/> Reanalyze Archived Samples	<input checked="" type="checkbox"/> Confirmation Sampling	<input type="checkbox"/> Physical Inspection of Archived Samples
<input type="checkbox"/> Other Recommendations:			
Additional Information Required: None.			

Completed by: Scott Walnicki

Date: 07/27/2017

Reviewed by: Alejandro Lopez, CHP

Date: 09/07/2017

Approved by: Matt Liscio

Date: 09/08/2017

Acronyms:

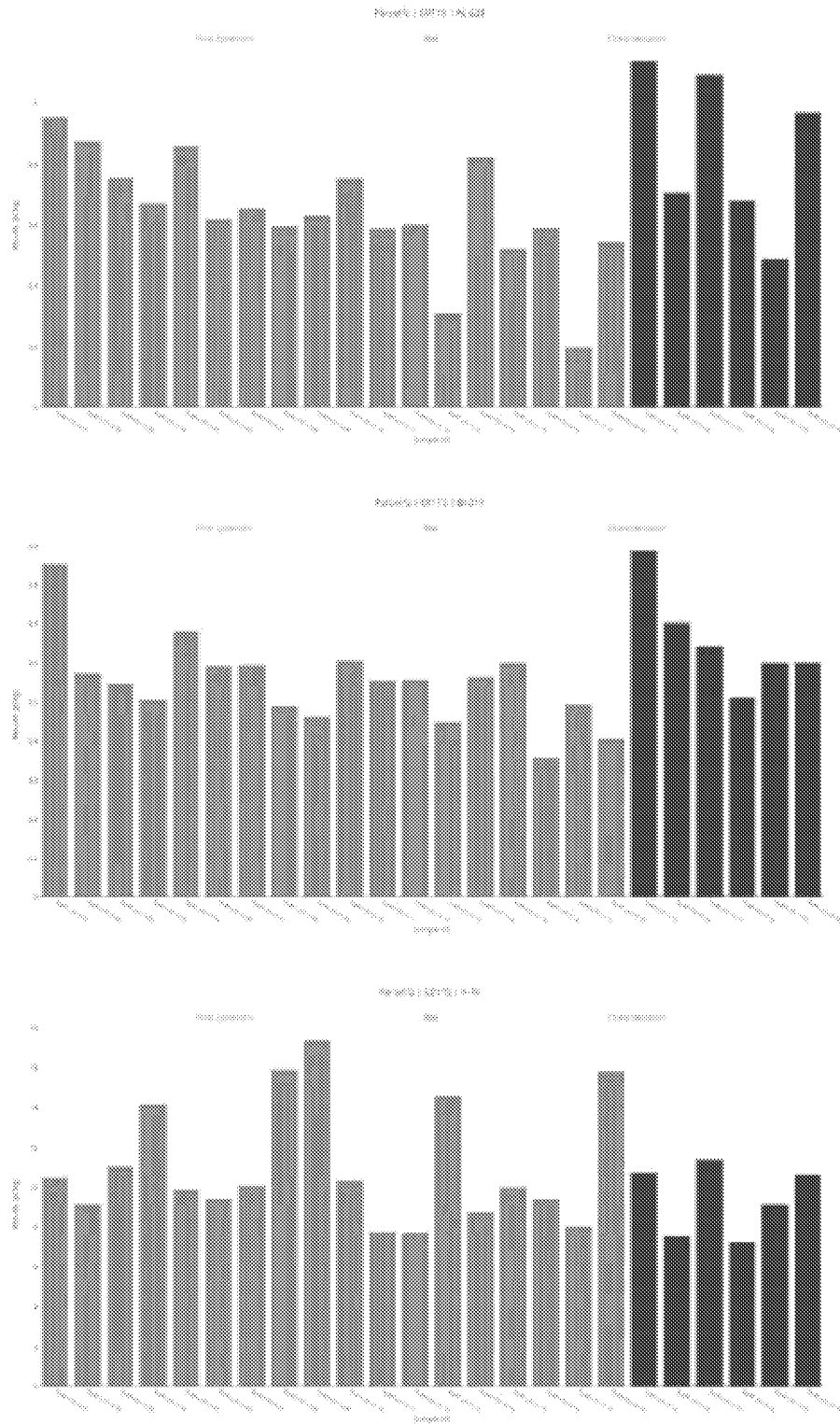
Ac Actinium (e.g., Ac-228)
 B Former Building (or other site) Surface Soil Survey Unit
 Bi Bismuth (e.g., Bi-214)
 Cs Cesium (e.g., Cs-137)
 CSR Construction Summary Report
 COC Chain of Custody
 ESU Excavation Survey Unit
 FSS Final Status Survey
 FSSR Final Status Survey Report

K Potassium (e.g., K-40)
 OB Overburden Unit
 Pb Lead (e.g., Pb-212)
 pCi/g picocuries per gram
 Ra Radium (e.g., Ra-226)
 RACR Remedial Action Completion Report
 ROC radionuclide of concern
 S Sewer or Storm Drain Removal Survey Unit
 SUPR Survey Unit Progress Report
 TU Trench Unit

Data Evaluation Documentation and Findings

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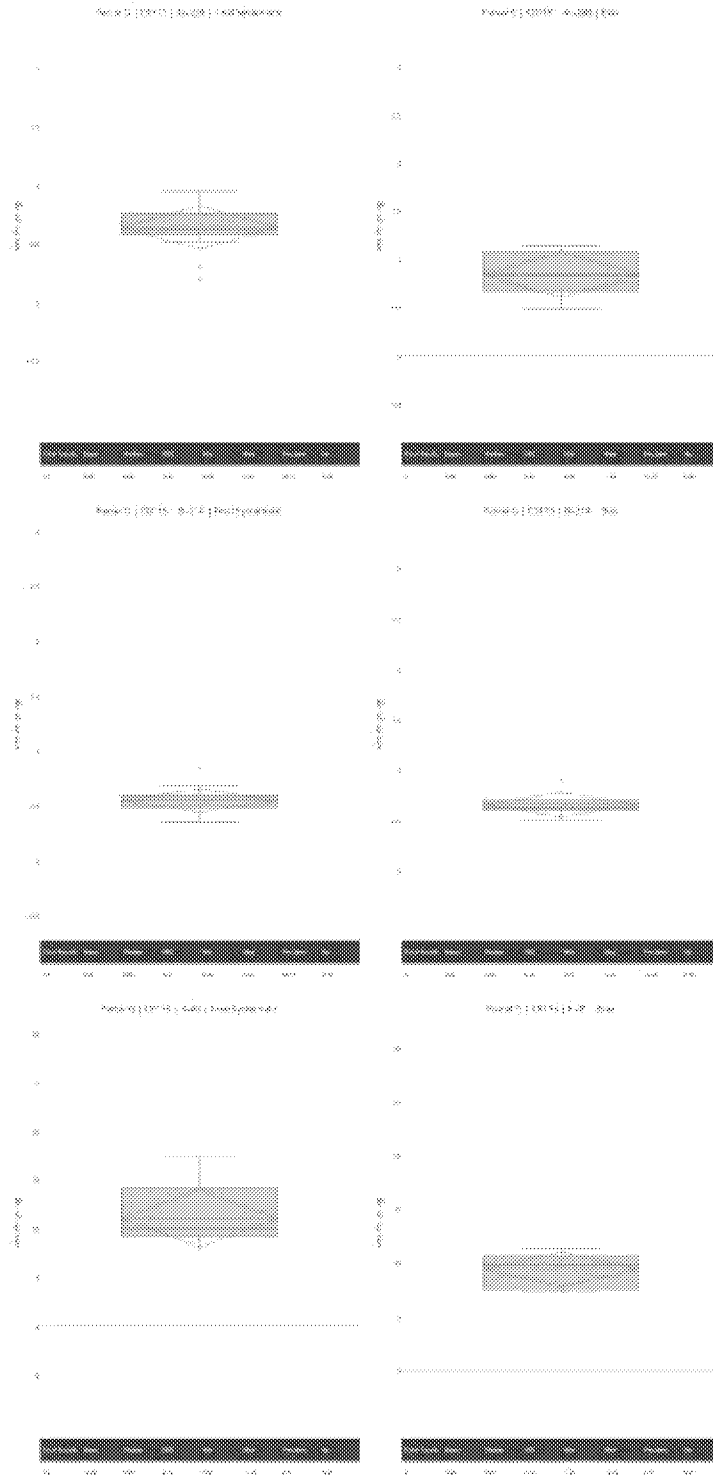
Time-Series Plots



Data Evaluation Documentation and Findings

Parcel:	G	Unit:	ES115 (S0113)
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Box Plots

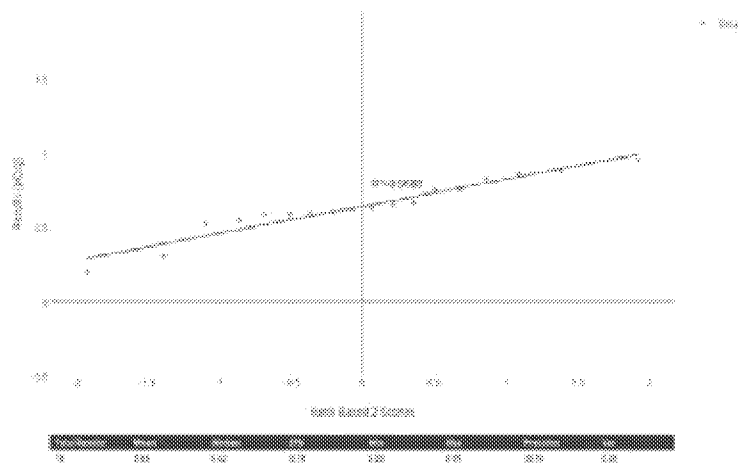


Data Evaluation Documentation and Findings

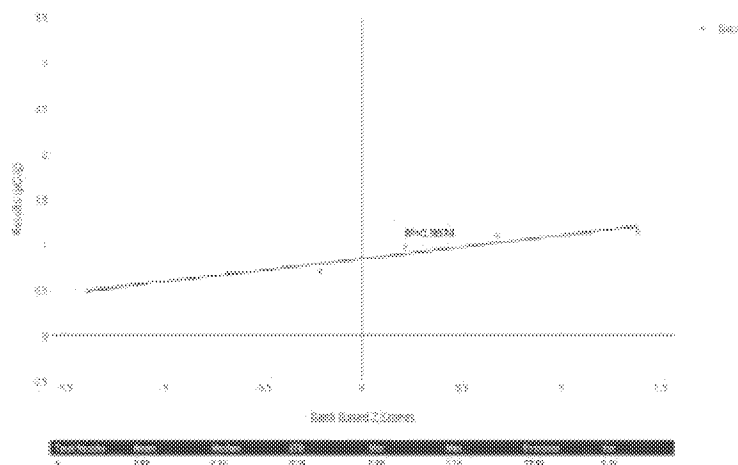
Parcel:	G	Unit:	ES115 (S0113)
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Normal Quantile Plots

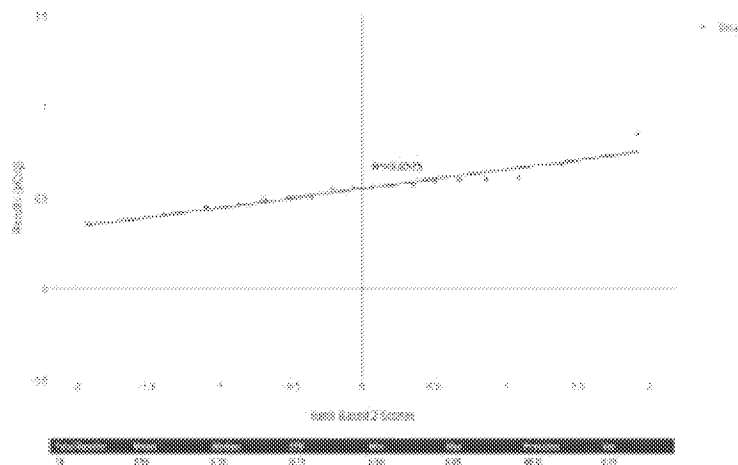
Parcel G | 07115 | A-228 | Retail Systematic



Parcel G | 10115 | A-228 | Retail

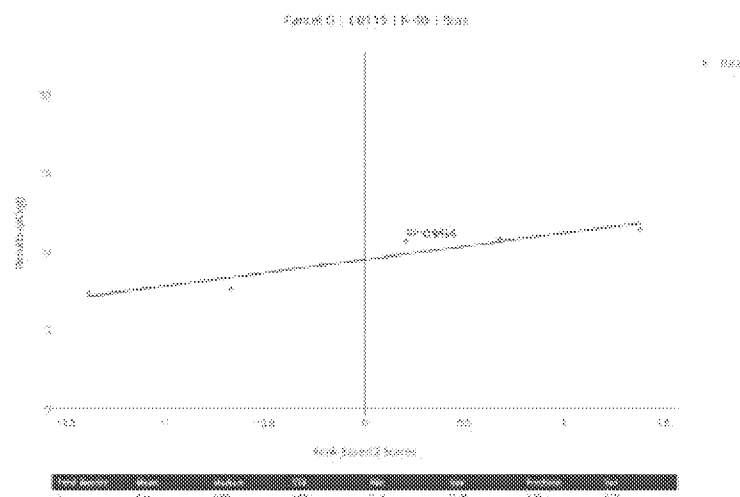
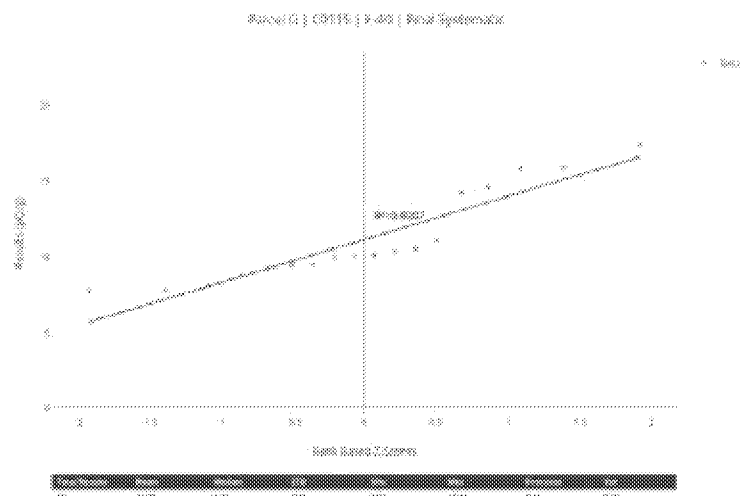
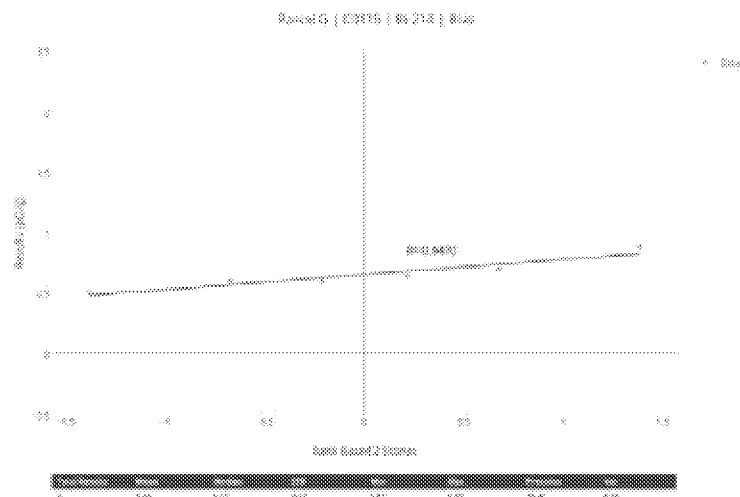


Parcel G | 05115 | B-274 | Retail Systematic



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